

Abstract Submitted
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The decoloration of organic dyes by pen-like plasma torch¹ TALUN SUNG, CHUNG-MING LIU, GIN-GOU YAN, SHINRIKI TEII, Lunghwa University of Science and Technology — In this work, the decoloration of organic of dyes (sky blue) by pen-like plasma torch was investigated. The pen-like plasma touch was powered by 13.56 MHz RF. The center stainless steel tube was anode which surrounded by ceramic tube as insulator media. At the end of pen, one cathode was covered by the stainless steel electrode. The argon gas flown the tube was excited into plasma by RF field. Because Ar plasma torch activate the water into OH and O radicals, the dyes was reacted with these radicals and the color bonds were broken by these active species. The decoloration process has been investigated by different power, the volume of dyes solution and time. The decoloration is determined by measuring the absorption of the dye solution with a monochrometer. The percentage of decoloration = (the absorption before plasma treatment – the absorption after plasma treatment) / (the absorption before plasma treatment – the absorption of pure water). The experiments have shown that the decoloration is proportional to RF power and treatment time but inversely proportional to the volume of dye solution.

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